

SCIENTIFIC SERIALS.

THE *Quarterly Journal of Microscopical Science* for November 1887 (volume xxviii, part 2) contains the following papers:—On the development of *Peripatus novæ-zealandiæ*, by Lillian Sheldon, Bathurst Student, Newnham College, Cambridge. (Plates 12 to 16.) The ripe ova are large when compared to those of *P. capensis* or *P. edwardsii*, measuring about 1.5 mm. in their long axis; this size seems due to the enormous amount of food-yolk with which the eggs are charged; the segmentation is on the centrolecithal type; the protoplasm is in the form of a reticulum; there are no traces of cell outlines. The various stages, from a want of material, were not in all cases noted, but the authoress with great ability traces many stages of the development of the embryo, until that in which the food material is completely absorbed, so that the embryo lies just within the vitelline membrane and egg shell. We trust that she will continue her investigations as fresh specimens are obtained, until she is enabled to write the whole life-history of this very interesting form.—On some points in the anatomy of Polychæta, by J. T. Cunningham. (Plates 17 to 19.) This paper gives the results of some investigations into certain Polychæte structures; on the nephridia and gonads, with a criticism of Cosmovici's paper on the "Glandes genitales et Organes segmentaires des Annelides Polychètes"; on the cardiac body, and on the neural canals.—On *Temnocephala*, an aberrant monogenetic Trematode, by William A. Haswell. (Plates 20 to 22.) Four species were found; one, *Temn. novæ-zealandiæ*, found on *Paranephrops setosus*, from rivers of New Zealand; a second, *Temn. minor*, on *Astacopsis bicarinatus*, from streams of New South Wales; a third, *Temn. quadricornis*, on *Astacopsis franklinii*, from northern rivers of Tasmania; and a fourth, *Temn. fasciata*, on *Astacopsis serratus*, streams of New South Wales. Diagnoses of these species are not given, but it is possible to distinguish them by the comparative details given of their structure; they seem to differ from the type species of the genus, *T. chilensis*, Gay; and Wood-Mason is probably wrong in thinking that this latter species is to be found in New Zealand. When undisturbed, the *Temnocephala* adhere to the surface of the crayfish by means of a sucker.—Notes on Echinoderm morphology, No. xi.: on the development of the apical plates in *Amphiura squamata*, by Dr. P. Herbert Carpenter, F.R.S.

SOCIETIES AND ACADEMIES.

LONDON.

Royal Society, December 8.—"The Post-embryonic Development of *Julus terrestris*." By F. G. Heathcote, M.A. Communicated by Adam Sedgwick, F.R.S.

With regard to the development of the coelom and generative organs, I have obtained the following results. The somites divide into two parts, as described for *Strongylosoma* by Metschnikoff, one part remaining in the body and the other part projecting into the legs. The cavities in these two parts together constitute the coelom. The part within the legs breaks up and the cells give rise to muscles. The part within the body passes dorsalwards along the thin sheet of mesoblast which unites it to its fellow of the other side, so that the two vesicle-like parts meet above the nerve-cord in the middle line. They join so as to form a single tube, the generative tube. The young ova, as well as the follicle cells surrounding them, are formed by cells proliferated from the walls of this generative tube. The body parts of the somites of the antennæ and mandibles break up and disappear, but those of the third pair of appendages give rise to the pair of salivary glands. There are two pairs of somites to each double segment.

In the development of the nerve-system, I find that there are two cerebral grooves formed as in *Peripatus*. They disappear early in the development. The ventral nerve-system, which at first consists of two separate cords united by a thin median part, undergoes a process of concentration which results in the presence of a single stout cord showing slight traces of its former double condition.

The heart is formed from mesoblast cells in the body-cavity. These cells, which were directly derived from the hypoblast in the early stages of development, form a network in the body-cavity. The heart is the result of a joining together of the meshes of this network, and thus is formed by the confluence of

a series of spaces in the mesoblast, and has nothing to do with the development of the coelom.

The body-cavity is a series of spaces between the gut and the body-wall, and is divided up by the mesoblast cells already referred to. It is distinct from the coelomic cavities of the somites, and is therefore a pseudocoel.

The eye-spots are all formed in the same manner. The hypodermis thickens, and a cavity appears within it bounded by pigment. This cavity becomes a distinct vesicle. The front wall of the vesicle becomes very thin and furnishes the lens, while the cells of the back (*i.e.* most internal) wall and sides become elongated and form the retinal elements of the eye. The nuclei of the front wall become very faint and finally disappear.

The most striking feature of the development is the reduction of the ventral part of the young animal and the increase of the dorsal. In the just hatched animal the ventral region is nearly as large as the dorsal, and the legs are wide apart, having a distinct space between them. As development progresses the dorsal region is increased, while the ventral is contracted till the bases of the legs are close together. The corresponding concentration of the nerve-cord I have already mentioned. In a paper on *Euphoberia*, a Carboniferous Myriapod, Mr. Scudder points out that one of the principal points in which the genus differs from existing Diplopoda is the development of the ventral region. The relations of the dorsal and ventral regions of the body of the *Euphoberia* correspond exactly to the condition of the young *Julus*.

With regard to the double segments of *Julus*, Newport held that each double segment corresponded to two segments originally distinct which had fused together; subsequent writers have held that each double segment is a single segment which has developed a second pair of legs. Now considering the double segments with regard to the development as well as to the adult condition, we see that the mesoblastic segmentation is double, so are the tracheal, the nervous, and circulatory systems. The only part of these double segments which is single is the dorsal plate with its stink glands which arise as invaginations in it; this dorsal plate being so enlarged as to form a complete ring round the body of the adult. Looking at the palæontology, we find that in the Archipolypoda, a family including the Archidesmidæ, Euphoberidæ, and Archijulidæ, the dorsal plate did show distinct traces of a division. Therefore I think that each double segment represents two complete segments, the dorsal plates of which have fused together to make one plate.

Zoological Society, December 6.—Prof. W. H. Flower, F.R.S., President, in the chair.—Mr. Howard Saunders exhibited (on behalf of the Rev. H. A. Macpherson) a specimen of the Isabelline Chat (*Saxicola isabellina*) shot in Cumberland, being the first recorded occurrence of this species in Great Britain.—Prof. Bell exhibited and made remarks on specimens of the tegumentary glands from the head of the Rocky Mountain Goat (*Haplocerus montanus*).—A communication was read from Prof. H. H. Giglioli and Count T. Salvadori, containing notes on the fauna of Corea and the adjoining coast of Manchuria. The notes were founded on a large collection, principally of Vertebrates, made by order of H.R.H. Prince Thomas of Savoy, Duke of Genoa, whilst he was in command of the *Vettor Pisani*, on a voyage round the world, 1878–81. The collection was stated to be now deposited in the Royal Zoological Museum at Florence.—A communication was read from M. L. Taczanowski, containing a list of birds collected in Corea by M. J. Kalinowski between September 1885 and March 1887. A Woodpecker in the collection was considered to be new to science, and named *Thripoxax kalinowskii*.—Prof. W. H. Flower read a paper on the Pygmy Hippopotamus of Liberia (*Hippopotamus liberiensis*), and its claims to distinct generic rank. The specimen of this animal in the National Collection possessed two incisor teeth on one side of the lower jaw. This and other considerations induced the author to question the advisability of separating it generically from *Hippopotamus*.—Mr. Francis Day, communicated a paper by Mr. J. Douglas-Ogilby, of the Australian Museum, Sydney, on a new genus and species of Australian Mugilidæ, which he proposed to designate *Trachystoma multidentis*.—Mr. Day also read a second paper by Mr. Ogilby, giving the description of a new genus of Percidæ based on examples taken in the Gulf of St. Vincent, South Australia, which the author proposed to describe as *Chthamaloptyx melbournensis*.—A communication was read from Dr. M. Menzbier, of Moscow, describing a third